



Dynamometer Study of Off-Cycle Exhaust Emissions

Subcontractor

Coordinating Research Council, Inc.

Principal Investigator

Steven H. Cadle
Environmental Research Dept.
General Motors R&D Center
30500 Mound Road, Box 9055
Warren, MI 48090-9055
(810) 986-1603

DOE Project Manager

Michael Gurevich
U.S. Department of Energy
CE-332, MS 6A-116/Forrestal
1000 Independence Avenue, SW
Washington, D.C. 20585
(202) 586-6104

NREL Technical Monitor

Brent Bailey
NREL
1617 Cole Boulevard
Golden, CO 80401
(303) 275-4468

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NREL Subcontract Administrator

Scott Montgomery (303) 275-3193

Objective

To characterize the impact of off-cycle driving on mass exhaust emissions, toxics, and reactivity as a function of fuel composition for gasoline, M85 (85% methanol [MeOH]), E85 (85% ethanol [EtOH]), and compressed natural gas (CNG) vehicles.

Approach

Seven gasoline vehicles, three flexible fuel vehicles (FFVs) calibrated for MeOH up to M85, three FFVs calibrated for EtOH up to E85, and three dedicated CNG vehicles will be tested with several fuels. An industry average gasoline



Vehicle emissions bag sampling system

(IAG), a California Phase 2 reformulated gasoline (RFG), two M85 blends, two M10 (10% MeOH, 90% gasoline) blends, one E85 blend, and four CNG blends will be tested in the vehicles. Exhaust emission tests will be run on a 48-inch chassis dynamometer using a "four-bag cycle" proposed by the Environmental Protection Agency (EPA). Tailpipe mass emissions and species will be measured with each vehicle/fuel combination.

Accomplishments

All tests except those with the E85 vehicles have been completed and data analysis has begun. The remaining testing will be completed during first quarter 1995.

Future Direction

Results from this study will be used to improve ambient air quality models.

Publications

Peltier, R.J. and R.A. Gorse, Jr. 1993. "Dynamometer Study of Off-Cycle Emissions," presented at the Contractors Coordination Meeting, Detroit, MI. October.

Gorse, R.A. Jr. 1995. "U.S. Auto/Oil Off-Cycle Emissions Program," presented at the CRC Fifth On-Road Vehicle Emissions Workshop, San Diego, CA. April.